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SPECIFICATION AMENDMENTS

BACKGROUND OF THE INVENTION

1. Field of the Invention The present invention is directed towards a method and apparatus for providing a safe, precise, and cost-effective storage tank leak detection system; and more particularly, to a method and apparatus wherein the containment integrity of a storage tank is determined by mass measurements of the stored product.

2. Background Information Storage tanks play a vital role in today's economy. The economy, on a global scale, depends on the proper function of these tanks as they are prevalent in several industries and virtually every geographical region in the world. In light of the vital role these storage tanks play, the integrity of the tanks is placed at a premium. That is, storage tank owners are willing to invest huge sums of money in both the maintenance and inspection of such tanks.

These tanks come in all shapes and sizes, are found both below and above ground, and are used to store a wide-range of materials. Storage tank capacities range from hundreds to millions of gallons and are used to store a staggering assortment of products; these storage tanks are commonly used to store hazardous material.

As one could imagine, there is a wide range of problems associated with maintaining storage tank integrity, particularly with above ground storage tanks. Given the enormous dimensions of above ground tanks, the corrosive products contained within the tanks, the incredible mass of the stored product, and the extreme weather conditions the tanks are subjected to; it is plain to see that above ground storage tank leaks are an all-to-common problem. Using the United States Environmental Protection Agency leak detection threshold criteria of .05 gallons per hour in a 10,000-gallon underground tank, that threshold would equate to a 15 gallon per hour detection level in an 80,000 barrel above ground tank. Given the limited number of systems capable of meeting the EPA's underground storage tank leak detection threshold and the added difficulties associated with above ground tanks, the difficulty in protecting against and detecting leaks is easily seen.